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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/078,056	02/15/2002	Ivan P. Mollov	05513.P002	6327

7590 04/22/2004

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EXAMINER

JOHNSTON, PHILLIP A

ART UNIT PAPER NUMBER

2881

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/078,056	Applicant(s) MOLLOV, IVAN P.	
	Examiner Phillip A Johnston	Art Unit 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20,22-31 and 33-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20,22-31 and 33-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4-6-2004</u> . | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

1. This Office Action is submitted in response to the Amendment filed 2-11-2004, wherein Claims 1,2,4,7-9,22-25,33-40,44-48, and 50 are amended, Claims 21-32 are cancelled and Claims 4-23 have been added. Claims 1-20,22-31, and 33-52 are pending.

Examiners Response to Arguments

2. Applicants arguments are moot in view of new grounds for rejection.

Claims Rejection – 35 U.S.C. 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1,2-15,17-19,22-25,28,30,33,34,37,38,40-48, and 50-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,753,921 to Trauernicht.

Trauernicht (921) discloses an imaging device having an x-ray conversion layer that generates light, which is detected by a single adjacent detection layer, and can be irradiated from the front or back of the device, as recited in Claims 1,10,22,37,38,40-43, and 50-52. See Column 3, line 65-67; Column 4, line 1-42; and Column 9, line 1-10.

Trauernicht (921) also discloses;

(a) A scintillation conversion layer and a semiconductor layer, as recited in Claims 3,4,12-15,23,24,30 and 34. See Column 8, line 55-63; and Column 10, line 41-65.

(b) The use of a photoconductive conversion layer to produce electrical charges across the semiconductor layer, along with electrodes, as recited in Claims 5-9,17-19,23-25, and 44-48. See Column 16, line 36-56.

Regarding Claims 2,11,22,28,33, and 39, Trauernicht (921) further discloses a radiation absorption relationship to describe the attenuation of the incident radiation as it propagates through a substrate. See Abstract.

It is implied herein, that the absorption of radiation in accordance with Trauernicht (921) is equivalent to the received x-ray intensity being greater near the first surface relative to the second surface of the converting layer being exposed by the incident x-rays, as recited in Claims 2,11,28, and 39; and is also equivalent to the generation and collection of charge across the semiconductor layer, as recited in Claims 28 and 33.

Art Unit: 2881

2. Claims 12,16,17,20,26,27,29,31,35,36, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,753,921 to Trauernicht in view of Suzuki, U.S. Patent Pub. No. 2003/0015665.

Trauernicht (921) as applied above fails to teach;

- (a) The use of a CCD, as recited in Claims 12,29, and 35;
- (b) The use of a CsI scintillator, as recited in Claim 16;
- (c) The use of a mirror layer, as recited in Claims 17,27, and 49; and
- (d) The use of a casing to hold the imager together, as recited in Claims 20,26,31, and 36.

However, Suzuki (665) discloses;

- (a) The use of a CCD, as recited in Claims 12,29, and 35. See Paragraph [0048].
- (b) The use of a CsI scintillator, as recited in Claim 16. See Paragraph [0027]
- (c) The use of a reflective layer, as recited in Claims 17,27, and 49. See Paragraph [0032]; and
- (d) The use of a frame to hold the device together, as recited in Claims 20,26,31, and 36. See Paragraph [0033].

Therefore it would have been obvious to one of ordinary skill in the art that the optical waveguide apparatus and method of Trauernicht (921) can be modified to use the detection, conversion and framing equipment of Suzuki (665), to a radiation image sensor and a scintillator panel by which clearer output images can be obtained.

Conclusion

5. The Amendment filed on 2-11-2004 has been considered but the arguments are moot in view of new grounds for rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

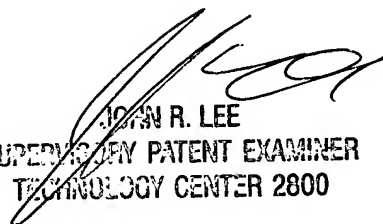
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications should be directed to Phillip Johnston whose telephone number is (571) 272-2475. The examiner can normally be reached on Monday-Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor John Lee can be reached at (571) 272-2477. The fax phone numbers are (703) 872-9318 for regular response activity, and (703) 872-9319 for after-final responses. In addition the customer service fax number is (703) 872- 9317.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.

PJ

April 6, 2004



JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800